# Relationship between memory and fast in crickets

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## Purpose

When we extend the fast of Acheta domesticus (refer to as crickets),their appetites rise.
We are going to research how the rising of appetites will influence the memory of their food's location.

## Hypothesis

A cricket whose fast is long can maintain their memory due to their rising apptite.

## Procedure

### Outline

We divided fifth-instar crickets into four groups. The name of each group is a one-day fast, a three-day fast, a five-day fast and a seven-day fast. The number of each group is seven. And we made them memorize the food's location by connecting it to smell of peppermint after the fast. And we researched how they maintain their memory five minutes, ten minutes or twenty minutes after the trial.


Fig.1.

【Experimental method】
We made a device and we conducted memory trials (②) and tests (④) on respective groups by using it after the fast.
①Fixed absorbent cotton which smells of peppermint on the side of A and put food there.
②Put a partition between P and Q. Released crickets in P for three minutes and made them memorize the food location.
③Removed the partition and moved them to Q. After that, put a partition again and waited for《five》minutes. During the same period, removed food from A.
④Removed the partition, moved crickets to P slowly.
⑤After they went into A, B or C, counted the number of the each cricket.
⑥Calculated the rate of crickets which went into A and made them into a graph.
Changed the inside of《》;five, ten or twenty and conducted ①～⑤ three times.

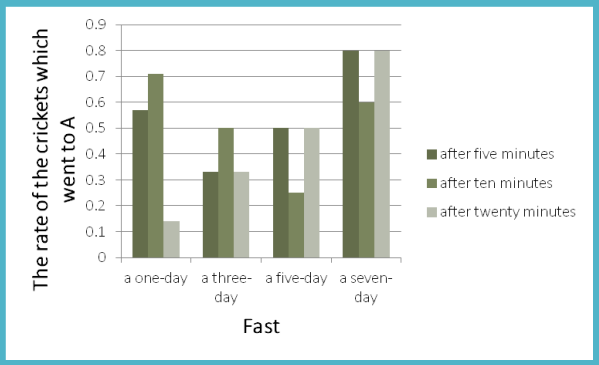
## Result and Consideration

### Result

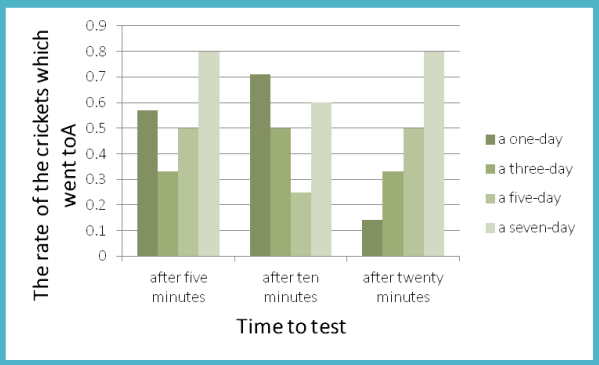
According to graph 1, we couldn't find the relationship between the fast and the rate of cricket which went into A in the data of five and ten minutes after the test. However the rate become higher as the fast time increased twenty minutes after the test.

### Consideration

It seems that more crickets can maintain their memory as the fast becomes longer when the time between the memory trial and the test is long. We can consider that this is because they are on the verge of starvation, that physiological desire. And so, it seems that there is a close connection between physiological desire and memory. To be sure of the consideration, we need to conduct an experiment which can get data for more than twenty minutes after the memorial trial.




Graph2




Graph1

## Reference material

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2008/4/10
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